AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A vacuum pump comprising a first pumping section, a second pumping section downstream from the first pumping section, a third pumping section downstream from the second pumping section, a first pump inlet through which fluid can enter the pump and pass through each of the pumping sections towards a pump outlet, and a second pump inlet through which fluid can enter the pump and pass through only the second and the third pumping sections towards the outlet, wherein the third pumping section comprises a helical groove formed in a stator thereof, and at least one of the first and second pumping sections comprises a helical groove formed in a rotor thereof.

2. (Previously Presented) The pump according to claim 1 wherein the depth of the helical groove on the rotor varies from the inlet side thereof to the outlet side thereof.

3. (Previously Presented) The pump according to claim 2 wherein the depth of the helical groove on the rotor decreases from the inlet side thereof to the outlet side thereof.

4. (Previously Presented) The pump according to claim 3 wherein the inclination of the helical groove on the rotor varies from the inlet side thereof to the outlet side thereof.

5. (Previously Presented) The pump according to claim 4 wherein the inclination of the helical groove on the rotor decreases from the inlet side thereof to the outlet side thereof.

6. (Previously Presented) The pump according to claim 1 wherein the depth of the groove at the inlet side of the rotor is greater than the depth of the groove at the inlet side of the stator.

7. (Previously Presented) The pump according to claim 1 wherein said one of the first and second pumping sections comprises at least one turbo-molecular stage downstream from said rotor.

8. (Previously Presented) The pump according to claim 5 wherein the second pumping section comprises said rotor.

9. (Previously Presented) The pump according to claim 8 wherein the first pumping section comprises at least one turbo-molecular stage.

10. (Previously Presented) The pump according to claim 9 wherein the turbo-molecular stage of the first pumping section is arranged such that, in use, molecules of fluid entering the helical groove on the rotor are emitted from the surface of a stator thereof.

11. (Previously Presented) The pump according to claim 9 wherein the first pumping section comprises at least three turbo-molecular stages.

12. (Previously Presented) The pump according to claim 10 wherein both the first and second pumping sections are axially displaced relative to the first and second inlets.

13. (Previously Presented) The pump according to claim 12 wherein one of the first and second inlets extends at least partially around the rotor.

14. (Original) A vacuum pump comprising a first pumping section and, downstream therefrom, a second pumping section, a first pump inlet through which fluid can enter the pump and pass through both the first pumping section and the second pumping section towards a pump outlet, and a second pump inlet through which fluid can enter the pump and pass through, of said sections, only the second pumping section towards the outlet, wherein one of the first and second pumping sections comprises an externally threaded rotor and one of the first and second pump inlets extends at least partially about the externally threaded rotor.

15. (Previously Presented) The pump according to claim 14 wherein the externally threaded rotor comprises a helical groove.

16. (Previously Presented) The pump according to claim 15 wherein the depth of the helical groove varies from the inlet side thereof to the outlet side thereof.

17. (Previously Presented) The pump according to claim 16 wherein the depth of the helical groove decreases from the inlet side thereof to the outlet side thereof.

18. (Previously Presented) The pump according to claim 17 wherein the inclination of the groove varies from the inlet side thereof to the outlet side thereof.

19. (Previously Presented) The pump according to claim 18 wherein the inclination of the groove decreases from the inlet side thereof to the outlet side thereof.

20. (Previously Presented) The pump according to claim 19 wherein said one of the first and second pumping sections comprises at least one turbo-molecular stage downstream from the externally threaded rotor.

21. (Previously Presented) The pump according to claim 15 wherein the second pumping section comprises said externally threaded rotor, the second inlet extending at least partially around the rotor.

22. (Previously Presented) The pump according to claim 21 wherein the first pumping section comprises at least one turbo-molecular stage.

23. (Previously Presented) The pump according to claim 22 wherein the first pumping section comprises at least three turbo-molecular stages.

24. (Previously Presented) The pump according to claim 23 wherein the turbo-molecular stage is arranged such that, in use, molecules of fluid entering the external thread therefrom are emitted from the surface of a stator thereof.

25. (Previously Presented) The pump according to claim 24 comprising at least one additional pumping section downstream from the first and second pumping sections for receiving fluid therefrom and outputting fluid towards the outlet.

26. (Previously Presented) The pump according to claim 25 wherein said at least one additional pumping section comprises a molecular drag stage.

27. (Previously Presented) A differentially pumped vacuum system comprising two chambers and further comprising a pump according to claim 14 for evacuating each of the chambers.

28. (Previously Presented) The system according to claim 27 wherein one of the pumping sections arranged to pump fluid from a chamber in which a pressure of above 10.sup.-3 mbar is to be generated comprises an externally threaded rotor.

29. (Previously Presented) The system according to claim 27 wherein at least one of the pumping stages arranged to pump fluid from a chamber in which a pressure of above 5.times.10.sup.-3 mbar is to be generated comprises an externally threaded rotor.

30. (Previously Presented) The system according to claim 28 wherein at least one of the pumping stages arranged to pump fluid from a chamber in which a pressure of above 5.times.10.sup.-3 mbar is to be generated comprises an externally threaded rotor.

31. (Previously Presented) The pump according to claim 1 wherein the depth of the helical groove on the rotor decreases from the inlet side thereof to the outlet side thereof.

32. (Previously Presented) The pump according to claim 1 wherein the inclination of the helical groove on the rotor varies from the inlet side thereof to the outlet side thereof.

33. (Previously Presented) The pump according to claim 1 wherein the inclination of the helical groove on the rotor decreases from the inlet side thereof to the outlet side thereof.

34. (Previously Presented) The pump according to claim 1 wherein the depth of the groove at the inlet side of the rotor is greater than the depth of the groove at the inlet side of the stator.

35. (Cancelled)

36. (Cancelled)

37. (Previously Presented) The pump according to claim 36, wherein the first pumping

section comprises at least one turbo-molecular stage.

38. (Previously Presented) The pump according to claim 37 wherein the turbo-molecular stage of the first pumping section is arranged such that, in use, molecules of fluid entering the helical groove on the rotor are emitted from the surface of a stator thereof.

39. (Previously Presented) The pump according to claim 38 wherein the first pumping section comprises at least three turbo-molecular stages.

40. (Previously Presented) The pump according to claim 39 wherein both the first and second pumping sections are axially displaced relative to the first and second inlets.

41. (Previously Presented) The pump according to claim 40 wherein one of the first and second inlets extends at least partially around the rotor.

42. (Previously Presented) The pump according to claim 1 wherein both the first and second pumping sections are axially displaced relative to the first and second inlets.

43. (Previously Presented) The pump according to claim 1 wherein one of the first and second inlets extends at least partially around the rotor.

44. (Previously Presented) The pump according to claim 22 comprising at least one

additional pumping section downstream from the first and second pumping sections for receiving fluid therefrom and outputting fluid towards the outlet.

45. (Previously Presented) The pump according to claim 15 comprising at least one additional pumping section downstream from the first and second pumping sections for receiving fluid therefrom and outputting fluid towards the outlet.

46. (Previously Presented) The pump according to claim 45 wherein said at least one additional pumping section comprises a molecular drag stage.

47. (Previously Presented) The pump according to claim 20 wherein the second pumping section comprises said externally threaded rotor, the second inlet extending at least partially around the rotor.

48. (Previously Presented) The pump according to claim 47 wherein the first pumping section comprises at least one turbo-molecular stage.

49. (Previously Presented) The pump according to claim 48 wherein the turbo-molecular stage is arranged such that, in use, molecules of fluid entering the external thread therefrom are emitted from the surface of a stator thereof.

50. (Previously Presented) The pump according to claim 49 comprising at least one additional pumping section downstream from the first and second pumping sections for

receiving fluid therefrom and outputting fluid towards the outlet.

51. (Previously Presented) The pump according to claim 20 comprising at least one additional pumping section downstream from the first and second pumping sections for receiving fluid therefrom and outputting fluid towards the outlet.

52. (Previously Presented) A differentially pumped vacuum system comprising two chambers and further comprising a pump according to claim 1 for evacuating each of the chambers.